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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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SMITH FROHWEIN TEMPEL GREENLEE BLAHA, LLC
Two Ravinia Drive
Suite 700
ATLANTA, GA 30346

EXAMINER

CHAN, RICHARD

ART UNIT	PAPER NUMBER
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2618

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/725,767

Applicant(s)

ISMAIL, ALY M.

Examiner

Richard Chan

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-9 and 11-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5, 7-9, 11, 12 and 15-18 is/are allowed.
- 6) ☒ Claim(s) 1-4, 13 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/23/07 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 5, 9, 13, and 15 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gomez (US 2004/0235445A1) in view of Vorenkamp (US 6,285,865) and in view of Li (US 7,076,225).

With respect to claim 1, Gomez discloses in Fig.3 a method for filtering a received signal in a wireless receiver, comprising: providing a received signal to a filter chain 306a and 308a located between a downconveter 302a and a demodulator (not shown), the filter chain comprising an input at input of 306a, a variable gain amplifier 308a and an output at output of 308a; and wherein the filter chain 311 arranged such that a feedback loop is located between an output of the variable gain amplifier 308a and output of the filter chain (306a and 308a), however the Gomez reference does not specifically disclose wherein the method for filter the received signal includes inverting the impedance of the received signal in the filter chain using an active circuit to simulate inductance applied at the output of the amplifier.

The Gomez reference however does disclose wherein the filter chain is a multiple stage baseband filter, and wherein the inverting the impedance of the received signal using an inductance applied at the output of an amplifier before the down conversion step that occurs at mixer.

The Vorenkamp reference discloses wherein a gyrator circuit is implemented to replace of Inductor capacitor circuits. Fig.52 (Col.56 line 45- Col.57 line 9)

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the active gyrator circuit used to create an inductance as disclosed by the Vorenkamp in order to eliminate the use of inductors and can easily be integrated onto a CMOS substrate to the method of filtering a received signal in a wireless signal of Gomez.

In related art, the Li reference teaches a DL loop to remove DC offset in Fig.1. The Li reference continues to teach a direct down converter 120 which outputs the mixed received signal and outputs to ADC 122 converting the analog received signal to a digital signal and then further filtered by digital filter 124. The filtered signal then goes through a DC offset circuitry 130, cancelling DC offset within the signal. The signal is further modified by the Digital variable gain amplifier 140 then finally outputted through digital demodulator 144.

It would have been obvious to one of ordinary skill of the art at the time to implement the multiple stage baseband stage in order to further filter and adjust the gain of the signal as disclosed by the Li reference to the receiver of Gomez and Vorenkamp combined in order to fine tune the signal for DC offset cancellation.

5. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gomez (US 2004/0235445A1) in view of Vorenkamp (US 6,285,865) and in view of Li (US 7,076,225) and in further view of Moulding (US 4,290,036).

With respect to claim 2, Gomez and Vorenkamp combined discloses the method of claim 1, however Gomez does not specifically disclose wherein inverting the impedance of the received signal at the output of the amplifier comprises using a voltage controlled source to transform the inductance applied to the received signal to a capacitance.

The Moulding reference however discloses wherein inverting the impedance of the received signal at the output of the first stage variable gain amplifier comprises using a voltage controlled source to transform the inductance applied to the received signal to a capacitance. (Col.2 line 28-57)

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement a voltage-controlled source to transform inductance to the received signal as disclosed by Moulding to the method of filtering as disclosed by Gomez and Vorenkamp in order to compensate for the resistance components.

With respect to claim 3, Gomez, Vorenkamp, Li, and Moulding combined disclose the method of claim 2, Moulding continues to disclose the method further comprising implementing the voltage controlled current source as a pair of transconductance amplifiers 15 and 16.

With respect to claim 4, Gomez, Vorenkamp, Li and Moulding combined disclose the method of claim 3, Gomez continues to disclose the method further comprising inserting a capacitance C405a at the output of a filter chain. 430

1. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moffat (US 6,906,584) in view of Gomez (US 2004/0235445A1) and in view of Vorenkamp (US 6,285,865).

With respect to claim 13, Moffat discloses a portable transceiver, comprising: means for modulating a data signal; means for up converting 148 the modulated data signal and provide a radio frequency signal; means for transmitting 102 the RF signal; means for converting 146 a received signal to a baseband signal; means for amplifying 10 the baseband signal; however Moffat does not specifically disclose wherein and means for inverting the impedance of the received signal at the output of the amplifying means to transform inductance applied to a received signal to a capacitance, the means for inverting the impedance having a feedback loop that bypasses the amplifying means, the means for inverting including an active circuit that simulates an inductance at the output at the output of the means for amplifying and wherein means for inverting the impedance of the received signal at the output of the means for amplifying in a first stage of a multiple stage baseband filter chain.

The Gomez reference discloses wherein means for inverting the impedance 311 of the received signal at the output of the amplifying means 308a to transform inductance L406a applied to a received signal to a capacitance C402a, the means for inverting the impedance 311 having a feedback loop located between an output of the amplifier 308a and output of the filter chain (306a and 308a) that bypasses the amplifying means.

It would have been obvious to one of ordinary skill in the art to implement the filter chain and impedance inverter as disclosed by Gomez with the portable transceiver

as disclosed by Moffat in order invert the impedance on the output signal of the amplifier.

The Vorenkamp reference discloses wherein a gyrator circuit is implemented to replace the Inductor capacitor circuits. Fig.52 (Col.56 line 45- Col.57 line 9)

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the active gyrator circuit used to create an inductance as disclosed by the Vorenkamp in order to eliminate the use of inductors and can easily be integrated onto a CMOS substrate to the method of filtering a received signal in a wireless signal of Gomez and Moffat.

In related art, the Li reference teaches a DL loop to remove DC offset in Fig.1. The Li reference continues to teach a direct down converter 120 which outputs the mixed received signal and outputs to ADC 122 converting the analog received signal to a digital signal and then further filtered by digital filter 124. The filtered signal then goes through a DC offset circuitry 130, cancelling DC offset within the signal. The signal is further modified by the Digital variable gain amplifier 140 then finally outputted through digital demodulator 144.

It would have been obvious to one of ordinary skill of the art at the time to implement the multiple stage baseband stage in order to further filter and adjust the gain of the signal as disclosed by the Li reference to the receiver of Gomez and Vorenkamp combined in order to fine tune the signal for DC offset cancellation.

2. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moffat (US 6,906,584) in view of Gomez (US 2004/0235445A1) in view of Vorenkamp (US 6,285,865) and in view of Li (US 7,076,225) and in further view Moulding (US 4,290,036).

With respect to claim 14, Moffat, Gomez, and Vorenkamp combined disclose the portable transceiver of claim 13, however neither reference combined further comprising voltage controlled current source means for inverting the impedance of the received signal at the output of the amplifier to transform the inductance applied to the received signal to a capacitance.

The Moulding reference however discloses wherein the transceiver comprising voltage controlled current source means for inverting the impedance of the received signal at the output of the amplifier to transform the inductance applied to the received signal to a capacitance. (Col.2 line 28-57)

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the voltage controlled current source for inverting the impedance of the received signal as disclosed by Moulding with the portable transceiver as disclosed by Moffat, Gomez, and Vorenkamp combined in order to control the impedance inverter by current source means.

Allowable Subject Matter

3. Claims 5, 7-9, 11-18 are allowed.

4. The following is an examiner's statement of reasons for allowance:

Claims submitted by applicant dated 11/23/07 have successfully overcome the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Chan whose telephone number is (571) 272-0570. The examiner can normally be reached on Mon - Fri (9AM - 5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571)272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Richard Chan
Art Division 2618
1/30/08


NAY MAUNG
SUPERVISORY PATENT EXAMINER